

In re Patent Application of:
PROCTOR, JR.
Serial No. **09/997,732**
Filing Date: **November 29, 2001**

In the Drawings:

Attached are two (2) replacement drawing sheets. The changes made to the drawings are explained in the remarks section below.

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REMARKS

The Applicant would like to thank the Examiner for the thorough examination of the present application. FIG. 1 has been modified to include missing reference numerals. In addition, FIG. 5 has been modified to correct a misspelled word. The specification has also been amended to correct minor grammatical errors.

Independent Claims 1 and 20 have been amended to more clearly define the present invention over the cited prior art references. In addition, the informalities in Claims 1, 14 and 20 have been corrected. Certain other dependent claims have also been amended for consistency. The claim amendments and arguments supporting patentability of the claims are presented in detail below.

I. The Claims Are Patentable

The Examiner rejected independent Claims 1 and 20 over the Shaheen patent. The present invention, as recited in amended independent Claim 1, for example, is directed a method for controlling timing of synchronization maintenance messages between a subscriber access unit and a base station processor in a wireless CDMA system. At least one link is provided between the subscriber access unit and the base station processor. The link establishes synchronization between the subscriber access unit and the base station processor.

The method further comprises transmitting a synchronization maintenance message from the subscriber access unit to the base station processor, and computing a timing interval to periodically resend the synchronization maintenance message. The synchronization maintenance messages

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are sufficient to maintain an idling mode connection between the subscriber access unit and the base station processor.

In particular, independent Claim 1 has been amended to recite that the synchronization maintenance message is periodically resent to the base station processor. This advantageously allows the subscriber access unit to maintain an idling mode connection with the base station processor. When the idle mode connection is maintained, synchronization of subchannels does not have to be reestablished for the subscriber access unit each time channels are taken away and then granted back.

Referring now to the Shaheen et al. patent, a TDMA cellular system supporting packet data transmission on reconfigurable packet data channels is provided. In particular, the Examiner has taken the position that column 9, line 44 to column 10, line 32 in the Shaheen et al. patent discloses computation of a timing interval in which to send additional synchronization maintenance messages sufficient to maintain an idling mode connection between the subscriber unit and the base station processor.

First, the Shaheen et al. patent is directed to a TDMA system. The title, the claims and the detailed description are all directed to a TDMA system. The only reference to a CDMA system is in the background section of the Shaheen et al. patent, which provides a laundry list of the various other communication protocols that have been developed. In sharp contrast, independent Claim 1 recites a CDMA system.

As discussed in the Applicant's specification beginning on page 4, line 21, the access and traffic channels

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are modulated using long code pseudonoise (PN) sequences. In order for a CDMA system to operate properly, a receiver in the field access unit needs to be synchronized with the transmitter in the base station. In TDMA systems, maintaining synchronization is not so critical since there are no spreading codes that have a very fine timing. There is not a multipath in a TDMA system problem, and the power levels of the subscriber units do not have to be managed by the base station processor since all subscriber units essentially transmit at full power. In sharp contrast, as the subscriber unit moves around in a CDMA system, its power level needs to be adjusted. By maintaining synchronization, this determination can be made in a CDMA system.

Even if we were to ignore the CDMA claim recitations in the present invention, the Shaheen et al. patent still fails to disclose computation of a timing interval in which the subscriber unit periodically resends the synchronization maintenance message to the base station processor for maintaining an idling mode connection therebetween. Instead, the subscriber unit in the Shaheen et al. patent synchronizes with the base station based upon a command from the base station. Reference is directed to column 10, lines 12-18 of the Shaheen et al. patent, which provides:

"While listening to its assigned PCCH, the subscriber unit may determine that the base station has packet data awaiting transmission to the subscriber unit. When such is the case, operation proceeds through step 524 to step 526 wherein the subscriber unit synchronizes its operation to an allocated packet

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channel upon which the packet data will be
transmitted to the subscriber unit."
(Emphasis added).

Moreover, when the subscriber unit moves out of an idle state, an initial synchronization or a resynchronization is performed. Reference is directed to column 9, lines 47-54 of the Shaheen et al. patent, which provides:

"FIG. 5 is a logic diagram illustrating operation of a subscriber unit according to the present invention in communicating with at least one base station to transfer packet data. Operation commences in an idle state **502** where the subscriber unit remains until operations commence. Should an initial synchronization or a resynchronization be required to set up packet data operations, operation passes through step **504** to optional step **506** wherein the subscriber unit camps on the DCCH. Typically, the subscriber unit will camp on the DCCH only at power on or during a resynch operation." (Emphasis added).

As highlighted above, the Shaheen et al. patent is not directed to a CDMA system; it is instead directed to a TDMA system. In addition, the Shaheen et al. patent fails to disclose that a timing interval is computed in which the subscriber unit periodically resends a synchronization maintenance message to the base station. By periodically resending the synchronization maintenance messages in the claimed invention, an idling mode connection is maintained between the subscriber unit and the base station.

In the Shaheen et al. patent, the subscriber unit synchronizes or resynchronizes during power on, or when the

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base station has packet data ready to send to the subscriber unit. In other words, a synchronization maintenance message is sent from the subscriber unit to the base station at certain conditions, and not on a periodic basis as determined by a computed timing interval. Therefore, it is submitted that amended independent Claim 1 is patentable over the Shaheen et al. patent.


Independent Claim 20 has been amended similar to amended independent Claim 1. Accordingly, it is submitted that amended independent Claim 20 is patentable over the Shaheen et al. patent. In view of the patentability of the amended independent Claims 1 and 20, it is submitted that their dependent claims, which recite yet further distinguishing features of the invention, are also patentable. These dependent claims require no further discussion herein.

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CONCLUSION

In view of the amendments to the claims and the arguments provided herein, it is submitted that all the claims are patentable. Accordingly, a Notice of Allowance is requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,


MICHAEL W. TAYLOR
Reg. No. 43,182
Allen, Dyer, Doppelt, Milbrath
& Gilchrist, P.A.
255 S. Orange Avenue, Suite 1401
Post Office Box 3791
Orlando, Florida 32802
407-841-2330

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